

**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTH CENTRAL REGIONAL OFFICE**

**FACT SHEET
FOR PROPOSED PERMITTING ACTION
UNDER 9 VAC 5 Chapter 80 Article 1 (TITLE V – CLEAN AIR ACT)**

APPLICANT:

VA-30635 AIRS ID 51-031-0010
Thomasville Furniture Industries, Inc.; Brookneal Plant
P.O. Box 290
Brookneal, Virginia 24528

FACILITY LOCATION:

Route 501 in Campbell County near intersection with Route 933 at Brookneal, Virginia
UTM Coordinates are ZONE: 17 EASTING: 681.7 km NORTHING: 4102.9 km

SOURCE DESCRIPTION

Thomasville Furniture Industries, Inc. is a manufacturer of wood furniture covered by Standard Industrial Classification (SIC) Code 2511 [North American Industry Classification System (NAICS) Code 337122]. This is a household wood furniture manufacturing plant. It receives dried wood, performs various woodworking processes, assembles, and finishes the wood furniture. Operations at the facility can be conducted twenty-four (24) hours per day, seven (7) days per week, fifty-two (52) weeks per year. The facility has had no production since mid-1997.

This plant was originally permitted in February 1975 by Virginia Metal Products. It was subsequently closed and the empty facility was taken over by Thomasville Furniture and converted into a wood furniture plant with their original new source review (NSR) permit being issued on September 15, 1976.

The original 1976 permit for the Thomasville plant included a 30 million Btu/hr Keeler boiler (ESBL1) permitted to burn wood and #2 fuel oil and two fabric filter control systems (CDBF1 & CDBF2) for the miscellaneous woodworking operations. Boiler particulate emissions are controlled by a multicyclone (CDMC1). NSPS Dc is not applicable to the Keeler boiler because it was constructed and installed prior to the promulgation date. A permit amendment September 12, 1979 was to allow the boiler to burn coal as the primary fuel instead of wood. July 9, 1981 an amendment was issued to limit the coal ash content to 6%. On March 26, 1993 a permit amendment was issued to replace the #2 oil burner with a 10.6 million Btu/hr natural gas burner. In 1996 a 5.2 million Btu/hr North American natural gas boiler was installed at the facility for use during periods of low heat requirement. This boiler is listed as an insignificant emissions unit. NSPS Dc does not apply to this boiler because of its small size. Conditions for the 1976 permit and amendments are still valid for the Keeler boiler.

An April 13, 1981 permit was issued for changes in woodworking equipment and to install a third fabric filter system (CDBF3). July 22, 1992 a permit was issued to install a wood grinder that was

controlled by one of the existing fabric filter systems. On August 25, 1993 a permit was issued for additional woodworking equipment and a fourth fabric filter system (CDBF4). The 4/13/81 and 8/26/93 permits were superceded and the 7/22/92 rescinded by a permit issued June 25, 2001 to cover the entire woodworking operation.

Finishes are primarily spray booth applied VOC-based wood furniture coatings. The wood furniture MACT, 40 CFR 63 Subpart JJ, is applicable, as an existing source. The plant's primary methods for meeting the MACT are to normally use only compliant coatings and/or average finish material VHAP content, as allowed by the MACT. The finishing operations are divided into 2 sections (ESFN1 & ESFN2). Most finishing is accomplished in the ESFN1 portion of finishing. Constructed in 1976, this section of the facility has no applicable NSR permit or permit limits. It includes 20 finishing spray booths, two dip tanks, and related steam heated ovens. The remaining portion of finishing is ESFN2, which consists of one finishing spray booth (# 21), was permitted June 23, 1986. This permit was superceded by a permit issued June 25, 2001.

Gluing at this plant is considered an insignificant source since it operates with the potential to emit less than 5 tons/yr of VOC. The glues used do not meet the definition of contact adhesive in the wood furniture MACT 40 CFR 63 Subpart JJ; therefore the MACT does not apply to the gluing operation. Gluing has no other applicable limits.

TITLE V PROGRAM APPLICABILITY BASIS:

The facility is a Title V major source due to the following:

- ? emissions of VOC exceeding 100 tons/yr from finishing,
- ? potential to emit emissions exceeding 100 tons/yr for SO₂ from burning coal,
- ? potential to emit of combined VHAPs exceeding 25 tons/yr, and
- ? potential to emit exceeding 10 tons/yr for the individual VHAPs: methanol and toluene.

The facility is located in an attainment area for all pollutants.

COMPLIANCE STATUS

The facility is inspected at least once per year, when operational. The facility was in compliance with the State Air Pollution Control Board Regulations during the last inspection during which the plant was operating. It was conducted on February 5, 1997. Since the plant stopped production in 1997 the small gas-fired boiler is the only equipment operated, and then only on occasion for space heating purposes.

EMISSIONS SUMMARY

PLANTWIDE EMISSIONS SUMMARY [TONS PER YEAR]	
CRITERIA POLLUTANTS	1996 ACTUAL EMISSIONS
Particulate Matter (PM ₁₀)	1.1
Nitrogen Oxides (NO _x)	4
Sulfur Dioxide (SO ₂)	6
Volatile Organic Compounds (VOC)	207
HAZARDOUS AIR POLLUTANTS	
Combined HAPs	Greater than 25

MACT Requirements

This facility is required to comply with the requirements of the National Emission Standards for Wood Furniture Manufacturing Operations (40 CFR Part 63, Subpart JJ). This MACT is applicable to this plant as an existing source because it was in operation before the MACT applicability date. The plant is in compliance with the MACT. The plant's principal way of meeting the MACT is to either use compliant coatings or averaging.

Periodic Monitoring**Keeler Boiler (ESBL1)**

Emission limits for Particulate Matter (PM), PM₁₀ and SO₂ for the Keeler boiler (ESBL1) are based on maximum design throughput for the equipment. The boiler is limited by the September 12, 1979 permit, amended July 9, 1981 & March 26, 1993, to burning coal with a sulfur content that does not exceed 1% or natural gas. The regulatory allowable SO₂ emission standard of 2.64K, where K equals the boiler input rating in MMBtu/hr, does not apply, as that would allow coal with a sulfur content in excess of 1.8%. The permittee will maintain records of the sulfur content of coal burned in the boiler in order to demonstrate that the coal used does not exceed a sulfur content of 1%. SO₂ emissions from burning natural gas will be negligible.

Particulate emissions from the Keeler boiler will be controlled by a multicyclone that is required by a September 15, 1976 permit. Particulate emissions from the boiler are limited by a September 12, 1979 permit to 0.33 lb/MMBtu. It is required by a July 9, 1981 permit amendment that the ash content of the coal not exceed 6%. At maximum capacity and using coal with a heat content of 13,000 Btu/lb the Keeler boiler will burn 1.15 tons of coal per hour. Assuming a conservative control efficiency of 50% for particulate matter and 0% for PM-10 for the multicyclone and using AP-42 factors of 15 lbs/ton for PM and 6.2 lbs/ton for PM-10 potential emissions from the boiler are:

$$1.15 \text{ ton coal/hr} \times 15 \text{ lb PM/ton} \div 30 \text{ MMBtu/hr} \times (1-.50) = 0.29 \text{ lb/MMBtu PM}$$

$$1.15 \text{ ton coal/hr} \times 6.2 \text{ lb PM}_{10}/\text{ton} \div 30\text{MMBtu/hr} \times (1-0.0) = 0.24 \text{ lb/MMBtu PM}_{10}$$

These calculations demonstrate that this boiler should not exceed the permitted PM/PM₁₀ emission limitation. The permittee will be required to perform a stack test for PM once each 5 year permitting cycle, after the boiler has been started up again for full-time use, to demonstrate that the boiler is in compliance. Maintenance, inspection, and operator training programs are required for the boiler and multicyclone to insure that they are operating properly. With the controls, required recordkeeping, required maintenance inspections, and stack testing it is felt that the margin of compliance is sufficient to assure compliance with the permitted limit.

Visible emissions for the Keeler boiler are limited to 20% opacity, except for one six-minute period per hour of 30% opacity. Monitoring of opacity will require the source to at least one time per week observe for the presence of visible emissions from the boiler stack, after the facility returns to operation.

If visible emissions are present, a visible emission evaluation (VEE) must be conducted in accordance with EPA Method 9 (reference 40 CFR 60, Appendix A) for a minimum of six (6) minutes. If any of the observations exceed the opacity limitation of 20%, the observation period shall continue until a total of sixty (60) minutes of observations have been completed. Timely corrective action shall be taken, if necessary, such that the boiler resumes operation within the 20% opacity limit. The source must maintain a boiler stack observation log to demonstrate compliance. The log shall identify the emissions point and include the date and time of the observations, whether or not there were visible emissions, any VEE recordings, the name of the observer, and any necessary corrective action.

Woodworking (WW)

All woodworking operations at the facility are controlled by fabric filters or closed loop. Fabric filters are, by design, able to meet the PM limitations of 0.01 grains/dscf in the permit.¹ Records of operating hours are required to be kept for CDBF3 and CDBF4 to insure that these dust systems operate for less than 7200 hours per year. Included in the permit are requirements that the source develop maintenance, inspection, spare parts, and training programs to insure the proper operation of the fabric filters. It is felt that the margin of compliance is sufficient to assure compliance with the regulated limits.

Visible emissions from the fabric filters are limited to 5% opacity. When the facility returns to operation weekly visual emission observations will be required on the fabric filter exhausts at the plant. If visible emissions are observed the permittee will take corrective action to resume operations without visible emissions. The permittee will keep a log of observations. The log shall identify the emissions point and include the date and time of the observations, whether or not there were visible emissions, any VEE recordings, the name of the observer and any necessary corrective action.

Finishing (ESFN1 & ESFN2)

VOC emissions for the 20 spray booths of ESFN1 (#1 thru #20) are not restricted by permit. VOC emissions for the single ESFN2 spray booth (#21) are limited by a June 25, 2001 permit. The permittee will maintain records of monthly and annual VOC emissions for the spray booth (#21) to

¹ When operating properly at 99.9% control efficiency emissions should be approximately 0.005 gr/dscf.

assure the VOC emission limits are not being exceeded. It is felt that the margin of compliance is sufficient to assure compliance with the permitted limits.

While not required by a NSR permit, the particulate emissions for all of the 20 spray booths in ESFN1 are controlled by either a water curtain spray or a filter. The permittee will be required by the Title V permit to maintain these particulate controls under 9 VAC 5-50-20. Visible emissions from these spray booths are limited to 20% opacity. Particulate emissions for the permitted ESFN2 spray booth are controlled by a water curtain spray. Visible emissions for this spray booth are limited to 5% opacity. Weekly visible emission observations are required for each spray booth stack when operating. If there are visible emissions, the permittee will take corrective action so that operations resume with no visible emissions. Included in the permit are requirements that the source develop maintenance, inspection, spare parts, and training programs to insure the proper operation of the spray booths.

LEGAL AND FACTUAL BASIS FOR DRAFT PERMIT CONDITIONS:

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the Commonwealth of Virginia Federal Operating Permit Regulations for the purposes of Title V of the Federal Clean Air Act (9 VAC 5 Chapter 80 Article 1), and underlying applicable requirements in other state and federal rules. Applicable requirement means all of the following as they apply to emission units in a Title V source:

- a. Any standard or other requirement provided for in the State Implementation Plan or the Federal Implementation Plan, including any source-specific provisions such as consent agreements or orders.
- b. Any term or condition of any preconstruction permit issued pursuant to 9 VAC 5-80-10, Article 8 (9 VAC 5-80-1700 et seq.) of this part or 9 VAC 5-80-30 or of any operating permit issued pursuant to 9 VAC 5 Chapter 80 Article 5, except for terms or conditions derived from applicable state requirements or from any requirement of these regulations not included in the definition of applicable requirement.
- c. Any standard or other requirement prescribed under these regulations, particularly the provisions of 9 VAC 5 Chapter 40 (9 VAC 5-40-10 et seq.), 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) or 9 VAC 5 Chapter 60 (9 VAC 5-60-10 et seq.), adopted pursuant to requirements of the federal Clean Air Act or under § 111, 112 or 129 of the federal Clean Air Act.
- d. Any requirement concerning accident prevention under § 112(r)(7) of the federal Clean Air Act.
- e. Any compliance monitoring requirements established pursuant to either § 504(b) or § 114(a)(3) of the federal Clean Air Act or these regulations.
- f. Any standard or other requirement for consumer and commercial products under § 183(e) of the federal Clean Air Act.
- g. Any standard or other requirement for tank vessels under § 183(f) of the federal Clean Air Act.

- h. Any standard or other requirement in 40 CFR Part 55 to control air pollution from outer continental shelf sources.
- i. Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the federal Clean Air Act, unless the administrator has determined that such requirements need not be contained in a permit issued under this article.
- j. With regard to temporary sources subject to 9 VAC 5-80-130, (i) any ambient air quality standard, except applicable state requirements, and (ii) requirements regarding increments or visibility as provided in Article 8 (9 VAC 5-80-1700 et seq.) of this part.
- k. Any standard or other requirement of the acid deposition control program under Title IV of the Clean Air Act or the regulations promulgated thereunder.
- l. Any standard or other requirement governing solid waste incineration under §129 of the Clean Air Act.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 9 VAC 5 Chapter 80 Article 1 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the state but is not federally enforceable is identified in the draft Title V permit as such.

REQUEST FOR VARIANCES OR ALTERNATIVES:

None

COMMENT PERIOD:

The public notice appeared in the Brookneal Union Star on October 31, 2001.

Beginning Date: October 31, 2001

Ending Date: November 29, 2001

All written comments should be addressed to the following individual and office:

Department of Environmental Quality
South Central Regional Office
7705 Timberlake Road
Lynchburg, VA 24502
Phone: (434) 582-5120 Fax: (434) 582-5125

PROCEDURE FOR REQUESTING PUBLIC HEARING:

During the public comment period any interested person may submit written comments on the draft

permit and may request a public hearing if no public hearing has already been scheduled. A request for a public hearing shall be in writing to the above address and shall state the nature of the issues proposed to be raised in the hearing. The Director shall grant such a request for a hearing if he concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.